

## **LISTING OF THE CLAIMS**

*The following listing of the claims replaces all prior claim listings and versions in the application:*

1. (Currently Amended) ~~Method~~ A method for cracking a hydrocarbon feed comprising a hydrocarbon and a diluent gas, the method comprising:  
passing the feed, ~~comprising a hydrocarbon and a diluent gas, in particular steam,~~ through a cracking coil in a firebox under cracking conditions,  
wherein the coil comprises at least one outlet section and at least one inlet section, and  
wherein the outlet section of said coil is more thermally shielded than the inlet section of said coil.
2. (Currently Amended) ~~Method~~ The method according to claim 1, wherein the firebox comprises at least one lane of outlet sections of the coils, at least two lanes of inlet sections of the coils and at least two lanes of burners, and  
wherein the at least one lane of outlet sections is located between at the least two lanes of inlet sections and the lanes of inlet sections are located in between the at least two lanes of burners.
3. (Currently Amended) ~~Method~~ The method according to claim 1, wherein the coils are arranged ~~essentially about~~ vertical and ~~essentially about~~ parallel to each other.
4. (Currently Amended) ~~Method~~ The method according to claim 1, wherein the feed is passed through the coils in a parallel flow in at least part of the coils.
5. (Currently Amended) ~~Method~~ The method according to claim 1, wherein the hydrocarbon feed including diluent gas (~~steam~~) is heated to a temperature above the vaporisation temperature ~~prior to entering the cracking coil or in the cracking coil or prior to the passing into the cracking coil.~~

6. (Currently Amended) ~~Method~~ The method according to claim 1, wherein the feed comprises a hydrocarbon selected from the group consisting of ethane, propane, butanes, naphthas, kerosenes, atmospheric gasoils, vacuum gasoils, heavy distillates, hydrogenated gasoils, gas condensates and ~~mixtures thereof~~ a mixture of any of the foregoing.

7. (Currently Amended) ~~Method~~ The method according to claim 1, wherein at least one product ~~[[is]]~~ formed comprises a substance selected from the group consisting of ethylene, propylene and butadiene.

8. (Currently Amended) ~~Cracking~~ A cracking furnace~~[[,]]~~ for steam cracking a hydrocarbon feed, the furnace comprising a firebox comprising: provided with  
a plurality of cracking coils comprising inlet sections and outlet sections, ~~said firebox comprising at least one lane of~~ with outlet sections of the coils, ~~at least two lanes of positioned in~~  
at least one lane and with inlet sections of the coils positioned in at least two lanes; and  
at least two lanes of burners,  
wherein the at least one lane of outlet sections is located between at the least two lanes of inlet sections and the at least two lanes of inlet sections are located in between the at least two lanes of burners.

9. (Currently Amended) ~~Cracking~~ The cracking furnace according to claim 8, wherein the lanes are ~~essentially~~ about parallel to each other.

10. (Currently Amended) ~~Cracking~~ The cracking furnace according to claim 8, wherein the outlet sections and the inlet sections are positioned ~~essentially~~ about vertically, ~~at least~~ during use.

11. (Currently Amended) ~~Cracking~~ The cracking furnace according to claim 8, wherein the inlet sections respectively in each lane of the at least two lanes and the outlet sections in ~~[[a]]~~  
the at least one lane are arranged in an inline arrangement or in a staggered arrangement, ~~viz a viz~~  
~~each other~~ and the inlet sections in each lane of the at least two lanes are positioned in a

staggered configuration with respect to outlet sections ~~respectively inlet sections~~ present in ~~[[the]]~~ an adjacent parallel lane or lanes of outlet sections respectively inlet sections.

12. (Currently Amended) ~~Cracking~~ The cracking furnace according to claim 11, wherein, the arrangement of the sections is in an equilateral triangular pitch, a isosceles triangular pitch, a right angled triangular pitch or a scalene triangular pitch.

13. (Currently Amended) ~~Cracking~~ The cracking furnace according to claim 12, wherein the ~~tubes~~ sections are unguided to ~~[[the]]~~ a bottom of the firebox.

14. (Currently Amended) ~~Cracking~~ The cracking furnace according to claim 8, wherein at least a number of the burners ~~[[are]]~~ is positioned at the floor and/or the roof of the firebox and/or the side walls of the ~~[[box]]~~ firebox and wherein the outlets of the coils extend through the roof of the firebox.

15. (Currently Amended) ~~Cracking~~ The cracking furnace according to claim 8, wherein at least ~~part a subset of coils~~ of the plurality of cracking coils, ~~are~~ is arranged in a arrangement allowing configured for parallel flow of the feed through each coil of the subset of coils~~[[,]]~~ during use.

16. (Currently Amended) ~~Cracking~~ The cracking furnace according to claim 8, wherein the plurality of coils ~~are selected from~~ consists of at least one group of the following:  
~~[[ -]]~~ coils comprising two inlet sections arranged to allow parallel flow during use and one outlet section in fluid communication with the inlet sections; and  
~~[[ -]]~~ coils comprising four inlet sections arranged to allow parallel flow during use and one outlet section in fluid communication with the inlet sections.

17. (Currently Amended) ~~Cracking~~ The cracking furnace according to claim 8, wherein the outlet sections are arranged in an in-line configuration or a staggered configuration, and wherein the pitch/outside diameter ratio is ~~selected in~~ ~~[[the]]~~ a range of 1.5 to 10, preferably in the range of 2 to 6.

18. (Currently Amended) ~~Method~~ The method for cracking a hydrocarbon[[,]] according to claim 1, wherein the said firebox is comprised in a cracking furnace.

19. (Currently Amended) ~~Method~~ The method according to claim 2, wherein the coils are arranged ~~essentially about~~ vertical and ~~essentially about~~ parallel to each other.

20. (Currently Amended) ~~Cracking~~ The cracking furnace according to claim 9, wherein the outlet sections and the inlet sections are positioned ~~essentially about~~ vertically, at least during use.

21. (New) The method according to claim 1, wherein the diluent gas comprises steam.

22. (New) The cracking furnace according to claim 17, wherein the pitch/outside diameter ratio is in the range of 2 to 6.